

CURRICULUM VITAE

Paul W. Armstrong, M.D.

September 10th, 2002

EDUCATION

Queen's University, Kingston, Ontario

Toronto General Hospital, University of Toronto, Toronto, Ontario (Internship)

Kingston General Hospital, Queen's University, Kingston, Ontario (Assistant Residency Medicine)

Massachusetts General Hospital, Harvard University, Boston, Massachusetts (Cardiac Fellow)

St. George's Hospital, London SW1, England (Cardiac Fellow)

ACADEMIC DISTINCTIONS AND AWARDS

1960 Rotary Citizenship Award (Port Arthur Collegiate Institute)

1963 Bachelor of Arts (Queen's University, Kingston, Ontario)

1965 Ruben Wells Penultimate Year Scholarship

1966 W.W. Near Scholarship

1966 M.D., Queen's University, Kingston, Ontario

1972 F.R.C.P. (Cardiology)

1972-81 Senior Research Fellow, Heart and Stroke Foundation of Ontario

1974 F.A.C.C.

1980 Basmajian Award, Queen's University, for excellence in medical research

1981-89 Career Investigator, Heart and Stroke Foundation of Ontario

1987 William Goldie Prize, Department of Medicine, University of Toronto

(For contribution of notable merit to the advancement of sound knowledge in Internal Medicine)

1990 Tony Graham Award, Heart and Stroke Foundation of Ontario, Outstanding Volunteer of 1990

1993 Research Achievement Award, Canadian Cardiovascular Society

1994 Fellowship of the European Society of Cardiology

1997 Canadian Cardiovascular Society Golden Jubilee Symposium Lecturer: CCS 50th Anniversary

1998 Award of Merit of the Heart and Stroke Foundation of Canada

1998 Elected to "*Best Doctors in Canada*" - November 1998

- 1998 The *Robert E Beamish Award* (for best significant original cardiologic research publication - Langer A, Singh N, Freeman MR, Tibshirani, Armstrong PW. Detection of silent ischemia adds to the prognostic value of coronary anatomy and left ventricular function in predicting outcome in unstable angina patients. Canadian Journal of Cardiology (II) 2:117-122, 1995)
- 1999 Department of Medicine, University of Alberta, Career Development Award
(First such award given for leadership in the pursuit of academic excellence.)
- 2001 Research Achievement Award, Department of Medicine, University of Alberta renamed "Paul W. Armstrong Excellence in Research Award"
- 2001 Cardiovascular Landmark Lecturer. "New frontiers in coronary reperfusion". XVII International Society for Heart Research World Congress. Winnipeg, Manitoba
- 2002 Alberta Cardiovascular Research Trainee Award named the "Paul W. Armstrong Award" for excellence in translational cardiovascular research.
- 2002 The *Robert E Beamish Award* (for leadership in promoting cardiovascular research and education.)

APPOINTMENTS: Prior

Assistant Professor, Medicine, Queen's University	July 1972 - June 1976
Director, Coronary Care Unit, Kingston General Hospital	July 1972 - June 1984
Associate Professor, Medicine, Queen's University	July 1976 - June 1981
Professor, Medicine, Queen's University	July 1981 - June 1984
Chief, Division of Cardiology, St. Michael's Hospital	July 1984 - August 1993
Professor, Medicine, University of Toronto	July 1984 - August 1993
Chief of Medicine, University of Alberta Hospital	September 1993-August, 1998
Professor and Chair, Department of Medicine, University of Alberta	September 1993 - June 1999

APPOINTMENTS: Current

Professor of Medicine, University of Alberta	July 1999 -
Director, Canadian VIGOUR Centre, University of Alberta	July 1999 -
Director, Heart Function Clinic, Capital Health Authority	September 1999 -
Director, CIHR Research Training Program grant - TORCH	April 2002 - 2008
<i>(Tomorrow's Research Cardiovascular Health Professionals)</i>	

MEMBERSHIP IN MEDICAL SOCIETIES

Ontario Medical Association	July 1966
The Paul Dudley White Society	July 1971
American Federation Clinical Research (Eastern section)	Aug. 1973
Canadian Cardiovascular Society	Sept. 1973
Canadian Society for Clinical Investigation	Jan. 1977
Canadian Society for Clinical Pharmacology	June 1981
International Society for Heart Research	Dec. 1987
Alberta Medical Association	Sept. 1993
Alberta Cardiovascular Society	Sept. 1993

FELLOWSHIPS

Royal College of Physicians and Surgeons, Canada	Nov. 1972
American College of Cardiology	Apr. 1974
Council on Circulation American Heart Association	Jan. 1983
European Society of Cardiology	Sept. 1994
Council on Clinical Cardiology of American Heart Association	July 1996
Basic CV Science Council of American Heart Association	July 1996
Fellow of the American Heart Association	July 2001

PROFESSIONAL AND ACADEMIC COMMITTEES

Heart and Stroke Foundation of Ontario	
Vice-President, Research	1986 - 1988
	and 1990 - 1991
Chairman, Research Policy Committee	1986 - 1988
	and 1990 - 1991
Member, Finance/Administration Committee	1988 - 1990
Member, Task Force Strategic Plan for Research	1990 - 1991

Heart and Stroke Foundation of Canada	
Member, Medical Advisory Committee	1986 - 1990
Chairman, Section on Cardiology	1986 - 1987
Chairman, Scientific Review Committee	1988 - 1990
Vice Chairman, Medical Advisory Committee	1990 - 1991
Chairman, Medical Advisory Committee	1991 - 1993
Chairman, Health Science Policy Council	1993 - 1995
Vice-President (Medical)	1993 - 1994
Member, Senior Advisory Council	1995 -
Health Science Policy Council Research Corp	1996-
Canadian Cardiovascular Society	
Councillor	1979 - 1984
Chairman, Scientific Program Committee	1981 - 1984
Member, Nominating Committee	1982 - 1984
Chairman, Student Awards Committee	1986 - 1988
Member, Young Investigator Awards Committee	1988 - 1989
Chairman, Young Investigator Awards Committee	1990
Member, Consensus Conference on the Management of the Post-myocardial Infarction Patient	1991
Member, Consensus Group on Thrombolysis and Acute Myocardial Infarction	1992
Student Presentation Reviewer, CCS Annual Meeting	2000
Chair, CCS Young Investigator Awards Committee	2002
Member, Working Group on Angina Reclassification	2002
Canadian Task Force for Cardiovascular Science (A joint initiative of the Heart & Stroke Foundation of Canada and the Canadian Cardiovascular Society)	
Co-Chairman	December 1991/October 1992
American College of Cardiology	
Governor-Elect for Ontario	1991
Governor for Ontario	1992 - 1993
Canadian Association Professors of Medicine	
Chair - Administration Committee	1993-1999 1995 -1998
American Heart Association Council on Clinical Cardiology	
Member, Credentials Committee	1994-1998
Canadian Institute of Academic Medicine	
Member	1995-
Committee for Policy Initiatives (Chair, 2001)	1998-
Councillor	2000-
Canadian Academy of Health Sciences	
Working Group - Member	2000-
Food & Drug Administration Directorate of the United States	
Consultant, Cardiovascular and Renal Drugs Advisory Committee	1999-2000
Member, Cardiovascular and Renal Drugs Advisory Committee	2000-2004

Canadian Institutes of Health Research	
Member, University-Industry Committee	2000-
Expert member, Proof of Principle Program Selection Panel	2001
King Faisal International Prize Committee Referee	2001
National Research Services Award	2001
Training Grant External Review Committee	
American College of Cardiology/American Heart Association	
ACC/AHA Writing Committee Guidelines	2002
on Acute Myocardial Infarction	
Alberta Heritage Foundation for Medical Research	
Health Technology Program Review Board	2002

INTRAMURAL PROFESSIONAL AND ACADEMIC COMMITTEES

University of Alberta, Department of Medicine - <i>Chair</i> , Department of Medicine Practice Plan Board	1993-1999
University of Alberta, Department of Medicine - <i>Chair</i> , Divisional Directors Steering Committee	1993-1999
University of Alberta, Department of Medicine - <i>Member</i> , Research Committee	1993-1999
University of Alberta, Department of Medicine - <i>Member</i> , Undergraduate Education Committee	1993-1999
University of Alberta, Department of Medicine - <i>Member</i> , Graduate Education Committee	1993-1999
University of Alberta, Department of Medicine - <i>Member</i> , Resident Training Committee	1993-1999
University of Alberta, Department of Medicine - <i>Chair</i> , Academic Evaluation Committee	1993-1999
University of Alberta, Faculty of Medicine - <i>Member</i> , Faculty Evaluation Committee	1993-1999
Capital Health Authority - <i>Regional Medical Director</i> , Medicine Program	1994 -1997
University of Alberta/Department of Medicine - <i>Chair of Organizing Committee and Course Director</i> , Advances in Internal Medicine for Primary Care Physicians	1994 -1999
University of Alberta, Department of Medicine - <i>Chair</i> , Research Planning and Priorities Committee	1996-1998
University of Alberta, Faculty of Medicine - <i>Member</i> , Faculty Planning and Priorities Committee	1997-1999
University of Alberta/University of Calgary - <i>Member</i> , Liaison Committee	
University of Alberta/Capital Health Authority University of Alberta Hospitals Site - <i>Chair</i> , Faculty of Medicine Grant Review Committee	1997-1999

AREAS OF RESEARCH ENDEAVOUR

1. Clinical Investigation of Ischemic Syndromes
Pathophysiology Diagnosis and Management of Unstable Angina
Pathophysiology Diagnosis and Management of Acute Myocardial Infarction
2. Clinical Investigation of Congestive Heart Failure
3. Regional and International Differences in the content and process of Cardiovascular Health Care

RESEARCH SUPERVISION

Extensive research supervision and mentoring of trainees and junior faculty.

EDITORIAL CONSULTANT

ACP Journal Club	Chest
American Heart Journal	Circulation
American Journal of Cardiology	Circulation Research
American Journal of Physiology	Clinical and Investigative Medicine
Annals of Internal Medicine	European Heart Journal
Archives of Internal Medicine	Evidence-Based Medicine
British Heart Journal	Journal of the American College of Cardiology
Canadian Journal of Cardiology	Journal of Cardiovascular Pharmacology
Canadian Journal of Physiology/Pharmacology	Journal of Thrombosis and Thrombolysis
Canadian Medical Association Journal	Metabolism Clinical and Experimental
Cardiology in Review	New England Journal of Medicine
Cardiovascular Research	
Catheterization and Cardiovascular Diagnosis	

EDITORIAL BOARD MEMBER

Acta Cardiologica	2001 -
American Heart Journal	1996 -
Canadian Journal of Cardiology	1994 -
Canadian Medical Association Journal	1997 -
Circulation	1993 -
- Section Editor (Clinical Cardiology: New Frontiers)	1997 -
Current Science	1998 -
Current Treatment Options in Cardiovascular Medicine	1998 -
Current Opinion in Cardiovascular, Renal and Pulmonary Investigational Drugs	1998 -
Heart Failure Reviews - International Associate Editor	1995 - 1999
Journal of American College of Cardiology	1996 - 2000
Journal of Cardiac Failure	1994 - 1999
Journal of Thrombosis and Thrombolysis	1997 -
theheart.org (Conceptis Technologies Inc.)	
- Consulting Editor	1999 -

ABSTRACT REVIEWER

American Heart Association	1989, 1990, 1992, 1994-2002
American College of Cardiology	1991, 1992, 1995-2003
European Society of Cardiology	1994-1998, 2001-2002
Canadian Cardiovascular Society	2000
Asia Pacific Scientific Forum	2002

PEER REVIEWED PUBLICATIONS (Selected Publications from a list of 304 titles)

- 1) Armstrong PW, Walker DC, Burton JR and Parker JO: Vasodilator Therapy in Acute Myocardial Infarction: A Comparison of Sodium Nitroprusside and Nitroglycerin. *Circulation* 52: 1118, 1975
- 2) Armstrong PW, Armstrong JA, Marks GS: Blood Levels After Sublingual Nitroglycerin. *Circulation* 59: 585, 1979
- 3) Armstrong PW, Watts DG, Hamilton DC, Chiong MA, Parker JO: Quantification of Myocardial Infarction: Template Model for Serial Creatinine Kinase Analysis. *Circulation* 60: 856, 1979
- 4) Armstrong PW, Chiong MA, Parker JO: The spectrum of unstable angina: Prognostic Role of Serum Creatine Kinase Determination. *Am J Cardiol* 49: 1849, 1982
- 5) Armstrong PW, Moffat JA, Marks GS: Arterial-venous nitroglycerin gradient during intravenous infusion in man. *Circulation* 66: 1273, 1982
- 6) Armstrong PW, Langevin LM, Watts DG: Randomized Trial of Prostacyclin Infusion in Acute Myocardial Infarction. *Am J Cardiol* 61: 455, 1988
- 7) Williams AE, Freeman MR, Chisholm RJ, Patt NL, Armstrong PW: Angiographic Morphology in Unstable Angina Pectoris. *Am J Cardiol* 62: 1024-1027, 1988
- 8) Armstrong PW, Baigrie RS, Daly PA, Haq A, Gent M, Roberts R, Freeman MR, Burns R, Liu P, Morgan CD: Tissue Plasminogen Activator: Toronto (TPAT) Placebo-Controlled Randomized Trial in Acute Myocardial Infarction. *J Am Coll Cardiol* 13(7): 1469-76, 1989
- 9) Langer A, Freeman MR, Armstrong PW: ST Segment Shift in Unstable Angina: Pathophysiology and Association with Coronary Anatomy and Hospital Outcome. *J Am Coll Cardiol* 13(7): 1495-502, 1989
- 10) Freeman MR, Williams AE, Chisholm RJ, Armstrong PW: Intracoronary Thrombus and Complex Morphology in Unstable Angina: Relation to Timing of Angiography and In-Hospital Cardiac Events. *Circulation* 80(1): 17-23, 1989
- 11) Weber KT, Pick R, Silver MA, Moe GW, Janicki JS, Zucker IH, Armstrong PW: Fibrillar Collagen and the Remodelling of the Dilated Canine Left Ventricle. *Circulation* 82: 1387-1401, 1990
- 12) Main JS, Forster C, Armstrong PW: Inhibitory Role of the Coronary Arterial Endothelium to Alpha-Adrenergic Stimulation in Experimental Heart Failure. *Circ Res* 68(4): 940-946, 1991
- 13) Morgan CD, Roberts RS, Haq A, Baigrie RS, Daly PA, Gent M, Armstrong PW, for the TPAT Study Group: Coronary Patency, Infarct Size, and Left Ventricular Function After Thrombolytic Therapy for Acute Myocardial Infarction: Results From the Tissue Plasminogen Activator: Toronto (TPAT) Placebo-Controlled Trial. *J Am Coll Cardiol* 17(7): 1451-1457, 1991
- 14) Topol EJ, Armstrong PW, Van de Werf F, Kleiman N, Lee K, Morris D, Simoons ML, Barbash G, White H, Califf RM, on behalf of the Global Utilization of Streptokinase and Tissue Plasminogen Activator for Occluded Coronary Arteries (GUSTO) Steering Committee. Confronting the Issues of Patient Safety and Investigator Conflict of Interest in an International Clinical Trial of Myocardial Reperfusion. *J Am Coll Cardiol* 19(6): 1123-1128, 1992
- 13) Weber K, Anversa P, Armstrong PW, Bauer JH, Brilla CG, Burnett JC, Cruickshank JM, Devereux RB, Giles TD, Korsgaard N, Leier CV, Mendelsohn FAO, Motz WH, Mulvany MJ, Strauer BE: Remodeling and Reparation of the Cardiovascular System: An International View. *J Am Coll Cardiol* 20: 3-16, 1992
- 14) GUSTO Investigators (Armstrong PW, Member of GUSTO Steering Committee): An International Randomized Trial Comparing Four Thrombolytic Strategies For Acute Myocardial Infarction. *New Engl J Med* 329:673-682, 1993

- 15) Armstrong PW, Smith ER, Breckenridge WC, Caverson MM, Dagenais GR, de Champlain J, McMillan CJ, Petrasovits A, Rolleston FS: Canadian Task for Cardiovascular Science: A Joint Initiative of the Heart & Stroke Foundation of Canada and the Canadian Cardiovascular Society. *Can J Cardiol* 9(8): 699-735, 1993.
- 16) Fibrinolytic Therapy Trialists' (FTT) Collaborative Group (Armstrong PW, Member): Indications for Fibrinolytic Therapy in Suspected Acute Myocardial Infarction: Collaborative Overview of early Mortality and Major Morbidity Results From all Randomised Trials of More than 1000 Patients: *Lancet* 343: 311-322, 1994.
- 17) Steinberg JS, Hochman JS, Morgan CD, Dorian SP, Theroux P, Topol EJ, Armstrong PW and LATE Ancillary Investigators: The Effects of Thrombolytic Therapy Administered 6-24 Hours After MI on the SAECCG: Results of a Multi-center Randomized Trial. *Circulation* 90 (2): 746-752, 1994
- 18) GUSTO II Investigators (The Global Use of Strategies to Open Occcluded Coronary Arteries). Randomized trial of intravenous heparin versus recombinant hirudin for acute coronary syndromes. *Circulation* 90: 1631-1637, 1994.
- 19) Mark D, Naylor D, Hlatky M, Califf R, Topol E, Granger C, Knight D, Nelson C, Lee K, Clapp-Channing N, Sutherland W, Pilote L, Armstrong PW: Use of Medical Resources and Quality of Life After Acute Myocardial Infarction in Canada and the United States. *New Engl J Med* 331: 1130-1135, 1994.
- 20) Armstrong PW, Furberg C. Clinical Trial Data and Safety Monitoring Boards: The Search for a Constitution. *Circulation* 91(3): 901-904, 1995
- 21) Langer A, Freeman MR, Josse RG, Armstrong PW: Metaiodobenzylguanidine Imaging in Diabetes Mellitus: Assessment of Cardiac Sympathetic Denervation and its Relation to Autonomic Dysfunction and Silent Myocardial Ischemia. *J Am Coll Cardiol* 25(3): 610-618, 1995
- 22) Mark D, Hlatky M, Califf R, Naylor D, Lee K, Armstrong PW, Barbash G, White H, Simoons ML, Nelson CL, Clapp-Channing N, Knight JD, Harrell Jr FE, Simes J, Topol EJ. Cost Effectiveness of Thrombolytic Therapy with Tissue Plasminogen Activator as Compared with Streptokinase for Acute Myocardial Infarction. *New Engl J Med* 332(21): 1418-1424, 1995
- 23) Langer A, Goodman SG, Topol EJ, Charlesworth A, Skene AM, Wilcox RG, Armstrong PW. Late Assessment of Thrombolytic Efficacy (LATE) Study: Prognosis in Patients with Non-Q Wave Myocardial Infarction. *J Am Coll Cardiol* 27(6): 1327-1332, 1996.
- 24) Califf RM, Armstrong PW, Carver JR, D'Agostino RB, Strauss WE. Task Force 5. Stratification of Patients Into High, Medium and Low Risk Subgroups for Purposes of Risk Factor Management. *J Am Coll Cardiol* 27(5): 1007-1019, 1996.
- 25) Ohman EM, Armstrong PW, Christenson RH, Granger CB, Katus HA, Hamm CW, O'Hanesian MA, Wagner GS, Kleiman NS, Harrell Jr FE, Califf RM, Topol EJ, for the GUSTO IIa Investigators. Cardiac Troponin T levels for Risk Stratification in Acute Myocardial Ischemia. *N Engl J Med* 335(18): 1333-1341, 1996
- 26) GUSTO Investigators (Armstrong PW, Member of GUSTO Steering Committee): A Comparison of Recombinant Hirudin with Heparin for the Treatment of Acute Coronary Syndromes. *New Engl J Med* 335(11): 775-782, 1996
- 27) Topol EJ, Califf RM, Van de Werf F, Simoons M, Hampton J, Lee KL, White H, Simes J, Armstrong PW for the VIGOUR Group. Perspectives on Large Scale Cardiovascular Clinical Trials for the New Millennium. *Circulation* 95(4): 1072-1082, 1997
- 28) Armstrong PW. [Editorial]. Heparin in Acute Coronary Disease: Requiem for a Heavyweight? *New Engl J Med* 337(14): 492-494, 1997

- 29) Goodman SG, Langer A, Ross AM, Wildermann NM, Barbagelata A, Sgarbossa EB, Wagner GS, Granger CB, Califf RM, Topol EJ, Simoons ML, Armstrong PW for the GUSTO -I Angiographic Investigators. Non-Q-wave versus Q-wave myocardial infarction after thrombolytic therapy: Angiographic and prognostic insights from the GUSTO-I angiographic substudy. *Circulation* 97(5): 444-450, 1998
- 30) The PARAGON Investigators (Armstrong PW, Member of PARAGON Steering Committee). International, randomized, controlled trial of lamifiban, (a platelet glycoprotein IIb/IIIa inhibitor), heparin or both in unstable angina. *Circulation* 97(24): 2386-2395, 1998.
- 31) Pfisterer M, Cox JL, Granger CB, Brener SJ, Naylor CD, Califf RM, Van de Werf F, Stebbins AL, Lee KL, Topol EJ, Armstrong PW for the GUSTO-I Investigators. Atenolol use and clinical outcomes after thrombolysis for acute myocardial infarction: The GUSTO-I experience. *J Am Coll Cardiol* 32(3): 634-640, 1998.
- 32) Armstrong PW, Fu Yuling, Chang Wei-Ching, Topol EJ, Granger CB, Betriu A, Van de Werf F, Lee KL, Califf RM for the GUSTO IIb Investigators. Acute coronary syndromes in the GUSTO IIb trial: Prognostic insights and impact of recurrent ischemia. *Circulation* 98: 1860-1868, 1998
- 33) The PARADIGM Investigators (Armstrong PW, Member of PARADIGM Steering Committee). Combining thrombolysis with the platelet glycoprotein IIb/IIIa inhibitor lamifiban: Results of the Platelet Aggregation Receptor Antagonist Dose Investigation and Reperfusion Gain in Myocardial Infarction (PARADIGM) trial. *J Am Coll Cardiol* 32: 2003-2010, 1998.
- 34) Assessment of the Safety and Efficacy of a New Thrombolytic (ASSENT-2) Investigators (Armstrong PW - Member of International Steering Committee). Single-bolus tenecteplase compared with front-loaded alteplase in acute myocardial infarction: the ASSENT-2 double-blind randomized trial. *Lancet*, 354(9180): 716-722, 1999.
- 35) Packer M, Poole-Wilson PA, Armstrong PW, Cleland JGF, Horowitz JD, Massie BM, Ryden L for the ATLAS investigators. Comparative effects of low doses and high doses of angiotensin converting enzyme inhibitor, Lisinopril, on morbidity and mortality in chronic heart failure. *Circulation* 100: 2312-2318, 1999.
- 36) The SYMPHONY Investigators (Armstrong PW - Member of International Steering Committee). Comparison of Sibrafiban, an oral platelet glycoprotein IIb/IIIa receptor antagonist, with aspirin for acute coronary syndromes. *Lancet* 355: 339-345, 2000.
- 37) Boersma E, Pieper KS, Steyerberg EW, Wilcox RG, Chang WC, Lee KL, Akkerhuis KM, Harrington RA, Deckers JW, Armstrong PW, Lincoff AM, Califf RM, Topol EJ, Simoons ML for the PURSUIT Investigators. Predictors of outcomes in patients with acute coronary syndromes without persistent ST-segment elevation. *Circulation* 101(22): 2557-2567, 2000.
- 38) Harrington RA, Armstrong PW, Graffagnino C, Van de Werf F, Kereiakes DJ, Sigmon KN, Card T, Joseph DM, Samuels R, Granett J, Califf RM, Topol EJ for APLAUD Study Investigators. Dose-finding, safety and tolerability of an oral platelet glycoprotein IIb/IIIa inhibitor, Lotrafiban, in patients with coronary or cerebral atherosclerotic disease. *Circulation* 102: 728-735, 2000.
- 39) Fu Y, Chang WC, Mark D, Califf RM, MacKenzie B, Granger CB, Topol EJ, Hlatky M, Armstrong PW for the GUSTO IIb investigators. Canadian-American differences in the management of acute coronary syndromes in GUSTO IIb: One-year follow-up of patients with versus those without ST segment elevation. *Circulation* 102: 1375-1381, 2000.
- 40) Theroux P, Willerson J, Armstrong PW: Progress in the Treatment of Acute Coronary Syndromes: A Fifty Year Perspective (1950-2000). *Circulation* 102: IV-2-IV-13, 2000.
- 41) Armstrong PW. Reperfusion synergism: Will it be both sustained and safe? [Editorial] *Eur Heart J* 21: 1913-1916, 2000.

- 42) Armstrong PW, Granger CB, Van de Werf. Bolus fibrinolysis: Risk, benefit and opportunities. [Current Perspective] *Circulation* 103: 1171-1173, 2001.
- 43) 2nd SYMPHONY Investigators. Randomized trial of aspirin, Sibralfiban or both for secondary prevention after acute coronary syndromes. *Circulation* 103: 1727-1733, 2001.
- 44) a. Armstrong PW, Collen D. Fibrinolysis for acute myocardial infarction: Current Status & New Horizons for Pharmacologic Reperfusion [Part 1] *Circulation* 103: 2862-2866, 2001.
b. Armstrong PW, Collen D. Fibrinolysis for acute myocardial infarction: Current Status & New Horizons for Pharmacologic Reperfusion [Part 2] *Circulation* 103: 2987-2992, 2001.
- 45) GUSTO V Investigators. (Armstrong PW - Member of International Steering Committee). Reperfusion therapy for acute myocardial infarction with fibrinolytic therapy or combination reduced fibrinolytic therapy and platelet glycoprotein IIb/IIIa inhibition: the GUSTO V randomised trial. *Lancet* 357: 1905-1914, 2001.
- 46) McAlister FA, Lawson FME, Teo KK, Armstrong PW. A systematic review of randomized trials of disease management programs in congestive heart failure. *Am J Med* 110: 378-384, 2001.
- 47) Kaul P, Fu Y, Chang W-C, Harrington RA, Moliterno DJ, Van de Werf, Armstrong PW. Prognostic value of ST-segment depression in acute coronary syndromes: Insights from PARAGON-A applied to GUSTO IIb. *J Am Coll Cardiol* 38: 64-71, 2001.
- 48) GUSTO IV-ACS Investigators. (Armstrong PW - Member of Executive Committee and International Steering Committee). Effect of glycoprotein IIb/IIIa receptor blocker abciximab on outcome in patients with acute coronary syndromes without early coronary revascularization: The GUSTO IV-ACS randomized trial. *Lancet* 357: 1915-1924, 2001.
- 49) ASSENT 3 Investigators (Armstrong PW - Member of Executive & Writing Committee). Efficacy and safety of tenecteplase in combination with enoxaparin, abciximab or unfractionated heparin: the ASSENT 3 randomized trial of acute myocardial infarction. *Lancet* 358, 605-613, 2001.
- 50) Fu Y, Goodman S, Chang W-C, Van de Werf F, Granger CB, Armstrong PW for the ASSENT 2 Investigators. Time to treatment influences the impact of ST segment resolution on one-year prognosis: Insights from ASSENT 2. *Circulation* 104: 2653-2659, 2001.
- 51) PARAGON B Investigators. (Armstrong PW - Member of Steering Committee). Randomized, placebo-controlled trial of titrated intravenous Lamifiban for acute coronary syndromes. *Circulation*. 105:316-321, 2001.
- 52) Armstrong PW. Coronary reperfusion: Numerators searching for denominators [Invited Commentary]. *Lancet*. 359:371-372, 2002.
- 53) Boersma E, Harrington RA, Moliterno DJ, White H, Theroux P, Van de Werf F, de Torbal A, Armstrong PW, Wallentin LC, Wilcox RG, Simes J, Califf RM, Topol EJ, Simoons ML. Platelet glycoprotein IIb/IIIa inhibitors in acute coronary syndromes: A meta-analysis of all major randomized clinical trials. *Lancet*. 359:189-198, 2002.
- 54) Newby LK, Califf RM, White HD, Harrington RA, Van de Werf F, Granger CB, Simes RJ, Hasselblad V, Armstrong PW. The failure of orally administered glycoprotein IIb/IIIa inhibitors. *Am J Med* 112:647-658, 2002.
- 55) Chang WC, Harrington RA, Simoons ML, Califf RM, Lincoff AM, Armstrong PW for the PURSUIT Investigators. Does eptifibatide confer a greater benefit to patients with unstable angina than with non-ST segment elevation MI? Insights from the PURSUIT Trial. *Eur Heart J*. 23:1102-1111, 2002.

Biography

Paul W. Armstrong, MD

Paul Armstrong is Professor of Medicine in the Division of Cardiology at the University of Alberta, Edmonton, Alberta, Canada and Director of the Canadian VIGOUR Centre. He is Director of the CIHR program training grant TORCH (TomorrQw's Research Cardiovascular Health Professionals) that represents a synergistic partnership between the universities of Alberta and Calgary. He is a Senior Attending Cardiologist at the University of Alberta Hospital with particular interest and expertise in acute coronary care and heart failure. In the latter capacity he serves as Director of the University of Alberta Hospital Heart Function Clinic. Dr Armstrong received his medical degree at Queen's University, Kingston, Ontario, Canada and after post-graduate training both there and at the University of Toronto, Ontario, Canada he undertook clinical and research training in cardiology at the Massachusetts General Hospital, Harvard Medical School, MA, USA and St. George's Hospital, London, UK.

Dr Armstrong's investigative career has developed along two major lines of inquiry. The first involved the study of the pathophysiology and novel therapeutic approaches of congestive heart failure using an experimental model as well as undertaking clinical investigative studies. The second, which is now his principal focus, involves the pathophysiology, diagnosis and management of acute coronary syndromes. He has a particular interest in the analysis of international differences in the process of cardiovascular care and their implications for the Canadian health care system.

Dr Armstrong is the author, or co-author of over 300 peer reviewed publications and a member of the editorial board of a number of publications, including the *Canadian Medical Association Journal* and the *Canadian Journal of Cardiology* and the *American Heart Journal* and *Circulation Section Editor of New Frontiers*. He also serves as a member on the FDA Cardiovascular and Renal Drugs Advisory Committee. In 1993, Dr Armstrong received the Research Achievement Award from the Canadian Cardiovascular Society, and in 1998, the Award of Merit from the Heart and Stroke Foundation of Canada for contributions to medical research.